

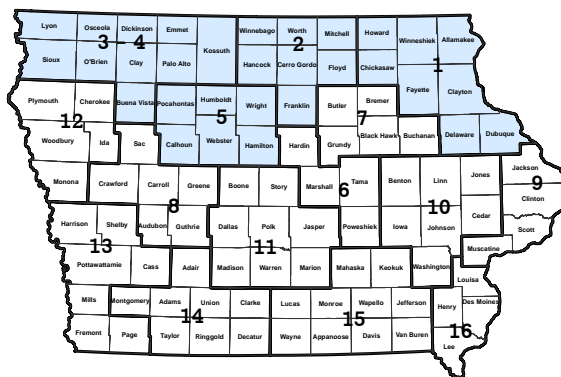
2012-2022

OCTOBER 2014

IOWA WORKFORCE DEVELOPMENT

REGIONS 1, 2, 3-4, 5

STEM JOBS



STEM OCCUPATIONS BY GROUP

REGION 1

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4]						
	2012 Est	2022 Proj	Annual Growth Rate (%)	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)						
Total, All Occupations	125,330	138,060	1.0	17.90	37,222										
Management Occupations	12,905	12,790	-0.1	36.24	75,375										
Medical & Health Services Managers	195	235	1.8	33.25	69,160	BA	N	N	B7	B9	B2	B3	SY1		
Financial Managers	390	445	1.4	49.59	103,156	BA	> 5	N	C1	B3	B2	B7	SY1	B9	B10
Farmers, Ranchers, & Other Agricultural Managers	7,195	6,555	-0.9	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4	
Business & Financial Operations Occupations	4,395	4,955	1.3	26.29	54,680										
Personal Financial Advisors	270	345	2.8	32.85	68,324	BA	N	N	B3	B9	B7	SY1	B10		
Accountants & Auditors	590	655	1.1	29.12	60,560	BA	N	N	B2	B5	B7	B10	B9		
Computer & Mathematical Occupations	2,635	3,235	2.3	33.68	70,046										
Software Developers, Systems Software	460	585	2.7	N.A.	N.A.	BA	N	N	B3	B2	T7	B7	C1		
Computer Systems Analysts	655	825	2.6	N.A.	N.A.	BA	N	N	B3	B2	B7	B9	SY2		
Computer User Support Specialists	500	625	2.6	22.30	46,385	SC	N	M	B2	B9	B7	B3	B10		
Software Developers, Applications	355	450	2.5	36.58	76,085	BA	N	N	C1	T7	SY2	SY1	SY3		
Healthcare Practitioners & Technical Occupations	5,770	6,745	1.7	29.46	61,271										
Pharmacy Technicians	320	405	2.5	13.87	28,860	HS	N	M	B2	B7	B9	B3	SO5	SO6	
Licensed Practical & Licensed Vocational Nurses	535	650	2.1	18.65	38,801	PS	N	N	B2	B9	B3	B7	SO1	SO5	
Dental Hygienists	200	240	2.0	30.39	63,203	AS	N	N	B2	B9	B3	B7	SO6		
Emergency Medical Technicians & Paramedics	265	310	1.7	12.78	26,575	PS	N	N	B3	SO5	B2	SO6	B9		
Pharmacists	215	250	1.6	52.71	109,640	DP	N	N	B2	B7	B1	B3	B9		
Registered Nurses	2,150	2,480	1.5	24.30	50,542	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5
Healthcare Support Occupations	3,405	3,905	1.5	12.25	25,472										
Dental Assistants	225	255	1.3	16.45	34,221	PS	N	N	B9	B2	B7	SO5	B3		
Food Preparation & Serving Related Occupations	8,950	9,930	1.1	9.23	19,208										
First-Line Supervisors of Food Prep/Serving Wkrs	460	520	1.3	14.18	29,499	HS	< 5	N	B9	B2	SO1	SO5	R3	B6	
Cooks, Institution & Cafeteria	660	725	1.0	10.87	22,611	< HS	N	S	R4	B2	B3	B6	B7	SO5	
Construction & Extraction Occupations	6,120	7,475	2.2	19.23	39,992										
Electricians	590	690	1.7	21.91	45,571	HS	N	A	T11	T9	B2	B3	T5	T8	
Plumbers, Pipefitters, & Steamfitters	290	345	1.7	22.33	46,455	HS	N	A	SO1	R4	B3	T5	B2	SY1	B6
Installation, Maintenance, & Repair Occupations	5,190	5,820	1.2	18.56	38,604										
Heat/A C/Refrig Mechanics & Installers	175	215	2.3	19.89	41,365	PS	N	L	T3	T11	T9	T1	T5		
Automotive Service Technicians & Mechanics	625	695	1.1	16.75	34,839	HS	N	L	T1	T9	T11	T2	T8		
Farm Equipment Mechanics & Service Technicians	295	325	1.0	17.55	36,494	HS	N	L	T9	T1	T11	T8	B3	T4	T5
Production Occupations	13,670	14,645	0.7	16.03	33,348										
Comp-Controlled Machine Tool Operators, Metal/Plastic	1,020	1,230	2.1	17.77	36,957	HS	N	M	B6	T5	B3	T8	T4		
Welders, Cutters, Solderers, & Brazers	765	830	0.8	16.21	33,711	HS	N	M	B3	B2	B6	SY1	T4	T5	

REGION 2

Total, All Occupations	62,755	68,070	0.8	17.23	35,845										
Management Occupations	6,880	6,700	-0.3	35.94	74,759										
Farmers, Ranchers, & Other Agricultural Managers	4,180	3,830	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4	
Business & Financial Operations Occupations	1,860	2,045	1.0	26.47	55,058										
Accountants & Auditors	295	330	1.2	27.55	57,313	BA	N	N	B2	B5	B7	B10	B9		
Healthcare Practitioners & Technical Occupations	3,340	3,820	1.5	29.96	62,307										
Licensed Practical & Licensed Vocational Nurses	305	360	2.0	17.42	36,228	PS	N	N	B2	B9	B3	B7	SO1	SO5	
Dental Hygienists	185	220	1.9	33.63	69,942	AS	N	N	B2	B9	B3	B7	SO6		
Registered Nurses	1,350	1,530	1.4	26.27	54,647	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5
Food Preparation & Serving Related Occupations	4,725	5,145	0.9	9.23	19,196										
First-Line Supervisors of Food Preparation & Serving Worker:	310	350	1.3	16.35	34,010	HS	< 5	N	B9	B2	SO1	SO5	R3	B6	
Cooks, Institution & Cafeteria	290	325	1.4	10.63	22,109	< HS	N	S	R4	B2	B3	B6	B7	SO5	
Installation, Maintenance, & Repair Occupations	2,805	3,130	1.1	19.65	40,875										
Automotive Service Technicians & Mechanics	375	410	0.9	16.42	34,150	HS	N	L	T1	T9	T11	T2	T8		
Farm Equipment Mechanics & Service Technicians	230	250	0.9	14.56	30,280	HS	N	L	T9	T1	T11	T8	B3	T4	T5
Production Occupations	7,125	7,680	0.8	15.46	32,156										
Welders, Cutters, Solderers, & Brazers	780	840	0.8	14.99	31,173	HS	N	M	B3	B2	B6	SY1	T4	T5	

STEM OCCUPATIONS BY GROUP

REGION 3-4

Occupational Title	Employment ^[1]			\$ ^[2]		Career Preparation ^[3]			Top Skills ^[4]							
	2012 Est	2022 Proj	Annual Growth Rate (%)	2014 Mean Wage	2014 Mean Salary	Educ	Work Exp	Job Training	(L-R in order of significance)							
Total, All Occupations	95,065	102,445	0.8	16.64	34,608											
Management Occupations	11,155	10,870	-0.3	36.61	76,150											
Financial Managers	325	355	0.9	41.10	85,479	BA	> 5	N	C1	B3	B2	B7	SY1	B9	B10	
Farmers, Ranchers, & Other Agricultural Managers	6,485	5,945	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4		
Business & Financial Operations Occupations	3,285	3,580	0.9	25.79	53,648											
Accountants & Auditors	535	610	1.3	25.68	53,408	BA	N	N	B2	B5	B7	B10	B9			
Architecture & Engineering Occupations	1,020	1,110	0.9	27.70	57,618											
Industrial Engineers	265	300	1.3	31.42	65,362	BA	N	N	B7	B2	C1	B3	B10			
Healthcare Practitioners & Technical Occupations	3,560	4,035	1.3	27.00	56,159											
Registered Nurses	1,390	1,560	1.2	23.65	49,195	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5	
Licensed Practical & Licensed Vocational Nurses	310	345	1.1	16.98	35,313	PS	N	N	B2	B9	B3	B7	SO1	SO5		
Food Preparation & Serving Related Occupations	6,285	6,870	0.9	9.37	19,481											
First-Line Supervisors of Food Preparation & Serving Workers	475	535	1.3	12.85	26,731	HS	< 5	N	B9	B2	SO1	SO5	R3	B6		
Construction & Extraction Occupations	4,390	5,245	1.9	16.60	34,532											
Electricians	285	320	1.4	21.49	44,701	HS	N	A	T11	T9	B2	B3	T5	T8		
Installation, Maintenance, & Repair Occupations	4,340	4,825	1.1	19.35	40,238											
Automotive Service Technicians & Mechanics	415	450	0.8	17.48	36,359	HS	N	L	T1	T9	T11	T2	T8			
Farm Equipment Mechanics & Service Technicians	480	520	0.7	18.61	38,715	HS	N	L	T9	T1	T11	T8	B3	T4	T5	
Production Occupations	10,890	11,225	0.3	15.17	31,545											
Water & Wastewater Treatment Plant & System Operators	205	225	1.0	17.82	37,056	HS	N	L	T4	T5	B6	T8	B2	T1	B7	T11
Computer-Controlled Machine Tool Operators, Metal & Plastic	210	230	1.0	14.84	30,869	HS	N	M	B6	T5	B3	T8	T4			
Welders, Cutters, Solderers, & Brazers	530	560	0.6	16.22	33,740	HS	N	M	B3	B2	B6	SY1	T4	T5		

REGION 5

Total, All Occupations	49,235	53,645	0.9	18.46	38,402											
Management Occupations	6,035	5,910	-0.2	36.20	75,302											
Farmers, Ranchers, & Other Agricultural Managers	3,535	3,250	-0.8	N.A.	N.A.	HS	> 5	N	B3	B9	B2	SY1	B7	R4		
Healthcare Practitioners & Technical Occupations	2,465	2,890	1.7	29.81	61,998											
Licensed Practical & Licensed Vocational Nurses	265	325	2.3	16.67	34,681	PS	N	N	B2	B9	B3	B7	SO1	SO5		
Registered Nurses	990	1,160	1.7	23.29	48,452	AS	N	N	SO6	B2	SO1	B9	B3	B7	SO5	
Food Preparation & Serving Related Occupations	3,110	3,435	1.0	9.31	19,369											
First-Line Supervisors of Food Preparation & Serving Workers	200	230	1.3	14.83	30,855	HS	< 5	N	B9	B2	SO1	SO5	R3	B6		
Cooks, Institution & Cafeteria	395	440	1.3	10.26	21,338	< HS	N	S	R4	B2	B3	B6	B7	SO5		
Construction & Extraction Occupations	2,425	2,930	2.1	19.96	41,510											
Electricians	385	460	1.9	19.42	40,396	HS	N	A	T11	T9	B2	B3	T5	T8		
Installation, Maintenance, & Repair Occupations	2,615	2,925	1.2	19.37	40,299											
Farm Equipment Mechanics & Service Technicians	225	245	0.7	N.A.	N.A.	HS	N	L	T9	T1	T11	T8	B3	T4	T5	
Automotive Service Technicians & Mechanics	415	435	0.5	17.89	37,202	HS	N	L	T1	T9	T11	T2	T8			
Production Occupations	3,790	4,070	0.7	15.72	32,697											
Welders, Cutters, Solderers, & Brazers	230	245	0.7	16.58	34,481	HS	N	M	B3	B2	B6	SY1	T4	T5		

Legend/Methodology/Selection Criteria:

The acronym **STEM**, as used in this publication, is a combined *occupational group* made up of occupations (residual or undefined occupations were not included) from existing and/or established occupational groups adopted from the Office of Management and Budget's (OMB) Standard Occupational Classification (SOC) Manual. The Occupational Information Network (O*NET) and Iowa Workforce Development determined those occupations having a preponderance of tools and skills from **Science**, **Technology**, **Engineering**, and/or **Mathematics**.

[1] Employment includes: **Estimated** = Estimation of labor force by occupation (rounded); **Projected** = Projection of future labor force by occupation (rounded); and **Annual Growth Rate (%)** = Ten year growth rate (not shown) divided by ten.

[2] Mean (Average) Wage & Salary (\$) = dividing the estimated total pay for an occupation by its weighted employment. Pay provided in wage (hourly) and salary (annual) formats; Missing pay data may be derived from calculation or proration of reported wage/salary data if available (i.e., legislator pay based on 4-months service, education and coaching pay based on 12-months service); Occupations with limited or no compensation data (which inhibits either wage or salary calculated derivations) are subsequently omitted from any methodological calculations.

[3] Career Preparation determined by the U.S. Department of Labor's Bureau of Labor Statistics (BLS). Alternative employment pathways may exist as well as differing educational, training, or licensing requirements per state. Iowa requirements are used in this publication when available. Career Preparation areas/levels include: **Education** (typical education level needed to enter an occupation): DP = Doctoral or Professional degree; MA = Master's degree; BA = Bachelor's degree; AS = Associate's degree; PS = Postsecondary non-degree award; SC = Some college, no degree; HS = High school diploma or equivalent; < HS = Less than high school; **Work Experience** (typical work experience level commonly considered necessary for entry into an occupation, or substitutable for formal types of training): > 5 = 5 years or more; < 5 = Less than 5 years; N = None; and **Job Training** (typical on-the-job training level needed to attain occupational competency): I = Internship/residency; A = Apprenticeship; L = Long-term on-the-job training; M = Moderate-term on-the-job training; S = Short-term on-the-job training; None = N.

[4] Top Skills refers to the top five (or more if tied) most important skills for a particular occupation as identified by sampled workers' questionnaire responses conducted by occupational analysts of the U.S. Department of Labor's Occupational Information Network (O*NET). These include: **Basic Skills**: B1 = Active Learning; B2 = Active Listening; B3 = Critical Thinking; B4 = Learning Strategies; B5 = Mathematics; B6 = Monitoring; B7 = Reading Comprehension; B8 = Science; B9 = Speaking; B10 = Writing; **Complex Problem Solving Skills**: C1 = Complex Problem Solving; **Resource Management Skills**: R1 = Management of Financial Resources; R2 = Management of Material Resources; R3 = Management of Personnel Resources; R4 = Time Management; **Social Skills**: SO1 = Coordination; SO2 = Instructing; SO3 = Negotiation; SO4 = Persuasion; SO5 = Service Orientation; SO6 = Social Perceptiveness; **Systems Skills**: SY1 = Judgment and Decision Making; SY2 = Systems Analysis; SY3 = Systems Evaluation; and **Technical Skills**: T1 = Equipment Maintenance; T2 = Equipment Selection; T3 = Installation; T4 = Operation and Control; T5 = Operation Monitoring; T6 = Operations Analysis; T7 = Programming; T8 = Quality Control Analysis; T9 = Repairing; T10 = Technology Design; T11 = Troubleshooting. N.A. = Not Available.

Sources:

Education/Work Experience/Job Training: Bureau of Labor Statistics, U.S. Department of Labor; **Employment**: 2012-2022 Occupational Projections estimates based on 2012 annual industry employment data and 2013 2nd quarter occupational staffing pattern data, Labor Market and Workforce Information Division, Iowa Workforce Development; **Skills**: Occupational Information Network (O*NET), Employment and Training Administration, U.S. Department of Labor; **Wages**: 2014 Iowa Wage Survey estimates (based on 2013 2nd quarter occupational wage data updated from 2014 2nd quarter using Employment Cost Index), Labor Market and Workforce Information Division, Iowa Workforce Development.

This publication was produced by the Labor Market and Workforce Information Division of Iowa Workforce Development. Revisions and/or corrections made when necessary. Inquiries may be directed to Brent Paulson at 515.281.3439 or Brent.Paulson@iwd.iowa.gov. Visit <http://iwin.iowaworkforce.org/> to obtain the latest workforce data and trends including this document under the **Publications** tab. Published 10/2014.